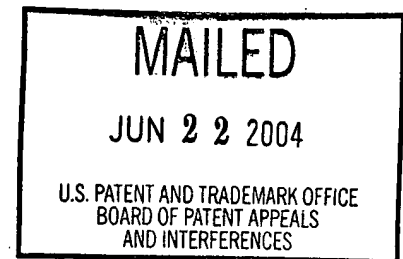Paper No. 30

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

_____

Ex parte NOBUYUKI KAWAI, HOK SHUEN WONG,
MICHAEL JOHN MCTIFFIN, and DAVID RANDALL

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Appeal No. 2004-0888
Application No. 08/904,312

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ON BRIEF

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│ U.S. PATENT AND TRADEMARK OFFICE │
│   BOARD OF PATENT APPEALS   │
│     AND INTERFERENCES       │
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Before HAIRSTON, KRASS and BARRETT, Administrative Patent Judges.

KRASS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1-4, 9-16, 19-24 and 27-38.[1]

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[1]The rejection of multiply-dependent claim 31 is as it relates to claims 1, 2, 9, 11, 12, 13, 19, 20, 27 and 28. The rejection of multiply-dependent claim 32 is as it relates to claims 3, 4, 10, 14, 15, 16, 22, 23, 29 and 30. The rejection of multiply-dependent claim 33 is as it relates to claims 9, 11, 12, 13, 19, 20, 27 and 28. The rejection of multiply-dependent claim 34 is as it relates to claims 10, 14, 15, 16, 22, 23, 29 and 30. The rejection of multiply-dependent claim 21 is as it relates to

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The invention is directed to updating a plurality of
location registers in a mobile communications system from a
central location register. In particular, the invention provides
an error correction protocol that maximizes the broadcast
throughput for a given bit error rate. A network global location
register (GLR-N) broadcasts a series of information frames I
containing location register information to each global location
register (GLR-L) over a broadcast channel. Periodically, each
GLR-L responds with an unsolicited response signal R_0 that may be
a receive read (RR) frame or a selective request frame (SREJ).
An RR frame indicates that no frame retransmission is required,
and an SREJ frame indicates which particular information frames,
i.e., a sequence order number, should be rebroadcast. On receipt
of an SREJ frame, the GLR-N only retransmits the requested data
when the requested data has not previously been transmitted
within a predetermined period of time.

The GLR-N broadcasts a new information frame that has not
been previously broadcast only when a sequential order of the new
information frame is not greater than a sequence order of the

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claims 19 and 20. The rejection of multiply-dependent claim 24
is as it relates to claims 22 and 23. Claims 35 and 37 depend
from multiply-dependent claim 21 and claims 36 and 38 depend from
multiply-dependent claim 24.

earliest of the frames that has been indicated to not have been

received by any one of the GLR-L by a predetermined number.

Representative independent claim 19 is reproduced as

follows:

19. Apparatus for receiving data from a broadcast station,
comprising means for receiving said data and means for
transmitting to the broadcast station at predetermined intervals
an error status signal which indicates whether error correction
information is required from the central station.

The examiner relies on the following references:

Fujikura et al. (Fujikura)	4,901,313	Feb. 13, 1990
Wiedeman	5,303,286	Apr. 12, 1994
Smolinske et al. (Smolinske)	5,487,068	Jan. 23, 1996
Ellis et al. (Ellis)	5,497,371	Mar. 05, 1996

Spragins et al. (Spragins), "Telecommunications Protocols and
Design", Addison-Wesley Publishing Company, (1991), pp. 316-321
and 328-329.

Claims 19-24 and 27-30 stand rejected under 35 U.S.C. § 103

as unpatentable over Spragins and Fujikura.

Claims 1-4 stand rejected under 35 U.S.C. § 103 as

unpatentable over Wiedeman, Smolinske and Fujikura.

Claims 9 and 10 stand rejected under 35 U.S.C. § 103 as

unpatentable over Smolinske, Spragins and Fujikura.

Claims 11-16 stand rejected under 35 U.S.C. § 103 as

unpatentable over Smolinske, Ellis and Fujikura.

Claims 31-34 stand rejected under 35 U.S.C. § 103 as unpatentable over Wiedeman, Smolinske, Spragins, Ellis and Fujikura.

Claims 35-38 stand rejected under 35 U.S.C. § 103 as unpatentable over Spragins, Wiedeman and Fujikura.

Reference is made to the briefs and answer for the respective positions of appellants and the examiner.

OPINION

At the outset, we note that, in accordance with appellants' grouping of the claims, at page 8 of the principal brief (supplemental brief of Mar. 7, 2002), the claims are grouped into six groups: 1. Claims 19-24, 27-30; 2. Claims 1-4; 3. Claims 9, 10; 4. Claims 11-16; 5. Claims 31-34 and 6. Claims 35-38. Accordingly, we will consider claims 19, 1, 9, 11, 31 and 35.

With regard to independent claim 19, the examiner relies on Spragins, Figures 7.13a-b and page 328, section 7.6.3, for a showing of receiving data from a primary station and transmitting to the primary station at predetermined intervals (1,0,0 to 1,2,0,P) and, in response to a polling signal P, an error status signal indicative of whether error correction information is required from a central station.

The examiner contends that Spragins does not teach that the primary station is a broadcast station which broadcasts to a plurality of secondary stations. Therefore, the examiner turns to Fujikura for a teaching of such a technique, pointing to secondary stations 2(1)-2(n) including means for receiving data from a broadcast station 2(0) and a means for transmitting an error status signal to the broadcast station, pointing to Figure 1 and column 5, (lines 5-60).

The examiner concludes that it would have been obvious to provide the broadcast of Fujikura to the system of Spragins "in order to conserve system's bandwidth" (answer-page 5).

For their part, appellants contend that the combination is improper because there is no suggestion within either Spragins or Fujikura "to provide the broadcast of Fujikura to the system of Spragins in order to conserve system's bandwidth." Appellants contend that since both Spragins and Fujikura already conserve system bandwidth (Spragins by retransmitting only the erroneous frame and Fujikura by providing a master station that only retransmits a frame having a sequence number indicated by a received retransmission request frame as being abnormally received by a slave station), there would be nothing gained by modifying one system by something taught in the other, i.e., how

does modifying Spragins by Fujikura further improve system throughput? Appellants contend that the examiner's mere assertion of an "improvement" to be had is not sufficient.

Appellants further contend that even if the combination is made, the claimed invention would not result because, contrary to the examiner's assertion, Spragins does not disclose receiving data from a broadcast station having means for transmitting to the broadcast station "at predetermined intervals" an error status signal. Appellants argue that, in Spragins, the nature of the error that the error correction request signal is used for is a random event and that if the error event is of a random nature, "it follows that Spragins does not transmit the error correction request signal at predetermined intervals" (principal brief-page 10). Moreover, contend appellants, Spragins provides insufficient disclosure to fairly conclude that the poll bit P is transmitted at the claimed predetermined intervals so that a secondary station has the claimed means for transmitting to a primary station at predetermined intervals an error status signal.

As far as Fujikura is concerned, appellants contend that this reference discloses a slave station that transmits a response frame based on a calculated timing decision that is a

function of the send sequence number of a received frame and that

the master station transmits all frames stored in buffer 204

without waiting for a response from individual slave stations.

Appellants conclude that in view of Fujikura's disclosure, the

sequence send number, as seen and used by a slave station,

"undoubtedly cannot be considered to provide the claimed periodic

intervals" (principal brief-page 10). As far as Fujikura's slave

station transmitting a retransmission request frame whenever a

point-to-multipoint frame is abnormally received, appellants

argue that "a Fujikura retransmission request frame is not sent

on a periodic interval" (principal brief-page 11).

With regard to appellants' argument that there is no

motivation to combine the references, we agree that the

examiner's rationale of providing the broadcast of Fujikura to

the system of Spragins "in order to conserve system's bandwidth"

is a little weak. However, we do not find appellants' argument

to be persuasive of unobviousness. While it is true that

Spragins appears to be directed to point-to-point communications

rather than point-to-multipoint communication, as would happen in

a broadcast system, it appears to us that Spragins' teaching of

receiving data and transmitting an error status signal indicating

whether error correction information is required would be

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applicable to both point-to-point and point-to-multipoint communication systems and appellants have not convinced us otherwise. The mere argument that Spragins is directed to a point-to-point communication system, and not to a broadcast system, does not address the question of why it would not have been obvious to apply Spragins' teachings to a broadcast system. To the extent that we may have applied the Spragins reference in a manner somewhat different than the examiner, this does not constitute a new ground of rejection. In re Halley, 296 F.2d 774, 132 USPQ 16 (CCPA 1961); In re Bush, 296 F.2d 491, 131 USPQ 263 (CCPA 1961).

Moreover, it clearly was known to artisans, and appellants do not deny it, that broadcasting conserves bandwidth. Fujikura, in a broadcasting system, i.e., point-to-multipoint communication, shows at least this much and, in view of the absence of any specific argument by appellants as to why the artisan would not have applied the teachings of Spragins to a broadcast system, as taught by Fujikura, we agree with the examiner that the teachings of Fujikura would have suggestd to the artisan to employ the Spragins techniques to a broadcast system.

With regard to the "predetermined intervals" limitation of claim 19, it appears to us that the examiner has stated a reasonable case for Spragins showing transmitting an error status signal at "predetermined intervals" since Figure 7.13 of the reference shows a primary station (which may be called a "broadcast" station) sending three information frames to a secondary station and a P bit set in the third information frame allows the secondary station to respond. Thus, periodically, the secondary station responds with a signal regarding transmission errors, i.e., an "error status signal" is transmitted periodically. Since the response is made after the third information frame with the P bit set in the third, it appears reasonable to contend that Spragins suggests transmitting an error status signal at predetermined intervals, as claimed.

Appellants contend that the error event is of a random nature, and so "it follows that Spragins does not transmit the error correction request signal at predetermined intervals." We disagree. In the example shown at least in Spragins' Figure 7.13, with an error occurring in the second frame, and a P bit set in the third frame, allowing the secondary station to respond to the error, it appears that the error status signal is transmitted "at predetermined intervals," as broadly claimed. It

may be that a response is not sent in any given interval, i.e., that an error status signal is not actually transmitted. But, it is enough, according to the instant claim language, that Spragins has some means for transmitting at the predetermined interval, e.g., after the third signal from the primary source, an error status signal even if one is not actually transmitted in every interval.

Accordingly, we will sustain the rejection of claims 19-24 and 27-30 (Group 1) under 35 U.S.C. § 103.

Moving on to independent claim 1, representative of the claims of Group 2, the examiner applies Wiedeman for the teaching of the claimed subject matter but for taking into account error transmission when the central station transmits information in packets of frames to the local station 37 which requires error detection in each of the local stations 37. However, the examiner cites Smolinske for the concept of using a selectively automatic repeat request (selective repeat ARQ) for requesting a selected retransmission frame when error occurs from a local station to the central station. It is the examiner's finding that Smolinske teaches that when an error packet occurs the subscriber unit transmits a selective-repeat ARQ to the base station and the base station retransmits the selected packet to

the subscribers (citing column 2, lines 16-43). Thus, concludes the examiner, it would have been obvious "to provide the error detection and selected error correction of Smolinske to the system of Wiedeman in order to provide reliable packet level communication."

As above, the examiner indicates that while the primary reference (Wiedeman, in this case) does not explicitly teach that the primary station is a broadcast station, or that data is broadcast to a plurality of secondary stations, Fujikura is said to teach this and the examiner combines Fujikura with Wiedeman and Smolinske "in order to conserve system's bandwidth."

As we indicated above, we view the combination as being reasonable since there is no evidence of record that the techniques disclosed for point-to-point communications would not be equally obvious to apply to point-to-multipoint communication systems.

While there may have been convincing arguments that appellants may have been able to make, the record shows that appellants' sole argument with regard to claim 1 and the Group 2 claims is that there would have been no reason to combine the references because Wiedeman is directed to point-to-point communication while Fujikura is directed to point-to-multipoint

communication and there is no evidence that system bandwidth is a problem which must be overcome by conserving system bandwidth. However, for the reasons <u>supra</u>, we will sustain the rejection of claim 1 and the Group 2 claims because it appears reasonable to us that techniques applicable to point-to-point communication systems would also be applicable to broadcast systems and appellants' arguments have not convinced us otherwise.

Arguments not made are waived. <u>In re Kroekel</u>, 803 F.2d 705, 231 USPQ 640 (Fed. Cir. 1986).

Regarding claims 9 and 10, i.e., Group 3 claims, these claims are directed to what appellants describe as a "sliding window" in their recitation of broadcasting a new frame which has not been previously broadcast only if a sequential order of the new frame is not greater than a sequence order of the earliest of the frames which has been indicated to not have been received by any one of the receiving stations by a predetermined number. Thus, the difference between the sequence number of new frames that are to be transmitted and the lowest sequence number of a frame transmitted, but not correctly received by all stations, is restricted.

Responsive to appellants' arguments that this limitation is not taught or suggested by the applied references, the examiner

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contends that "Spragins teaches that a new frame I,2,0,P

(fig.7.13b) which has not previously been transmitted is

transmitted only if the sequence order 2 of said new frame is

less than a predetermined number 3 of frame I,3,0 greater than 1

the earliest of said frames I, 1, 0 which has not been received

by any one of local stations (page 328, section 7.6.3, figs 7.13a

and 7.13b)" (answer-pages 19-20).

We have reviewed the applicable portions of Spragins and we

find nothing therein to suggest the instant claimed limitation of

broadcasting "a new frame which has not been previously broadcast

only if a sequential order of the new frame is not greater than a

sequence order of the earliest of said frames which has been

indicated to not have been received by any one of the receiving

stations by a predetermined number."

Accordingly, we will not sustain the rejection of claims 9

and 10 under 35 U.S.C. § 103 because Spragins simply does not

disclose what the examiner alleges it to disclose.

We do note, however, with curiosity, that in describing

Fujikura, at pages 2-3 of the reply brief, appellants state that

Fujikura "conserves bandwidth by responding to a request for

retransmitting an abnormally received frame by transmitting the

requested frame in advance of transmission of different frames

that have not been transmitted yet" (reply brief-pages 2-3,

citing column 7, lines 20-31 of Fujikura). This language sounds

very similar to the language of instant claim 9, yet appellants

do not discuss how the instant claimed subject distinguishes over

this disclosure by Fujukura.

Moreover, while the examiner has not applied Fujikura as the

primary reference to reject any of the instant claims, and we

decline to reexamine the case in view of Fujikura, we note, in

passing, that Fujikura appears to be a very relevant reference

and would seem to have some applicability to broad instant claim

19, for example, based on the broadcast nature of the system and

on a possible showing of a predetermined interval transmission of

an error status signal in Figure 9.

We now turn to claim 11, and the claims of Group 4.

The examiner's position is that Smolinske discloses the

transmission of data to a plurality of data receiving stations

wherein a base site transmits data in a common channel in a

format comprising a plurality of frames to receiving stations

(the examiner cites column 2, lines 31-33, of Smolinske). Citing

column 2, lines 33-39, of Smolinske, the examiner contends that

the reference also teaches receiving unsolicited error correction

request signals indicating selected ones of the frames, as

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claimed. The examiner cites column 2, lines 36-42, of the
reference for retransmitting the selected frames to the receiving
stations in response to the request signals.

The examiner indicates that the frames of Smolinske
"inherently" include frame sequence information N(S) indicating
the sequence of each frame and receive state information N(R)
indicating the sequence of any frames received from any of the
receive stations "because it is implemented with selective repeat
ARQ protocol in the HDLC layer which is ISO/IEC 7809" (answer-
page 12).

The difference between the instant claimed invention and
that disclosed by Smolinske, says the examiner, is that, in the
latter, "the frame does not include receive state information
N(R) indicating the sequence of any frames" (answer-page 12).
However, the examiner argues that Ellis, teaching an HDLC format
frame which includes the frame sequence number N(S) 4, but does
not include receive state information N(R) indicating the
sequence of any frames, citing Figures 3-4 of Ellis, would have
made it obvious to apply this teaching to Smolinske "so that
higher priority of information packets can be transmitted over a
single communication link" (answer-page 13).

Moreover, the examiner again applies Fujikura for its "broadcast" teaching, indicating that it would have been obvious to provide the broadcast of Fujikura to the system of Smolinske "in order to conserve bandwidth" (answer-page 13).

On its face, the examiner's position does not appear to be unreasonable and it was up to appellants to convincingly rebut the prima facie case of obviousness presented by the examiner. While it may be that appellants may have been able to present arguments to rebut the case, appellants do not refute the examiner's interpretation of Ellis of, for that matter, either of Smolinske or Fujikura, arguing only that the combination of Smolinske and Fujikura is improper because the examiner bases the combination on "conserving system bandwidth." For the reasons supra, it appears to us that the artisan would clearly have recognized the applicability of the communication techniques of Smolinske to broadcast environments. Since appellants present no further arguments and we have already held that we do not find persuasive the argument relative to an improper motivation to combine, we will sustain the rejection of claims 11-16 (Group 4) under 35 U.S.C. § 103.

With regard to the rejection of claims 31-34 (Group 5) and 35-38 (Group 6) under 35 U.S.C. § 103, we will also sustain these

rejections because appellants present no new arguments regarding the substantive merits of these claims, preferring, instead, at pages 16-21 of the principal brief, to merely state that there is no proper motivation established by the examiner for combining the references for reasons previously given. Since we are not persuaded by these arguments of appellants, for the reasons supra, we find that appellants have not successfully rebutted what we consider to be a prima facie case of obviousness established by the examiner.

CONCLUSION

We have sustained the rejection of claims 1-4, 11-16, 19-24 and 27-38 under 35 U.S.C. § 103 but we have not sustained the rejection of claims 9 and 10 under 35 U.S.C. § 103.

Accordingly, the examiner's decision is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

KENNETH W. HAIRSTON   )
Administrative Patent Judge   )
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ERROL A. KRASS   ) BOARD OF PATENT
Administrative Patent Judge   )   APPEALS AND
)   INTERFERENCES
)
)
LEE E. BARRETT   )
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